miface Ethernet / RS10

Universal Interface with Ethernet TCP/IP / Serial Interface RS232/485/422

User's M

FEMA ELECTRÓNICA, S.A.

Distribuidor en España :
FEMA ELECTRONICA, S.A.
Pol.Ind. Santiga Altimira 14 (T14 – N2)
E-08210 Barber à BARCELONA
Tel. 93.729.6004 www.fema.es
Fax 93.729.6003 info@fema.es

microSYST Systemelectronic GmbH, Zur Centralwerkstätte 10, D-92637 Weiden, Germany
Phone: +49-961-39166 0, Fax: +49-961-39166 10, www.microsyst.de, info@microsyst.de

Table of Contents

microSYST Systemelectronic GmbH, Zur Centralwerkstätte 10, D-92637 Weiden, Germany
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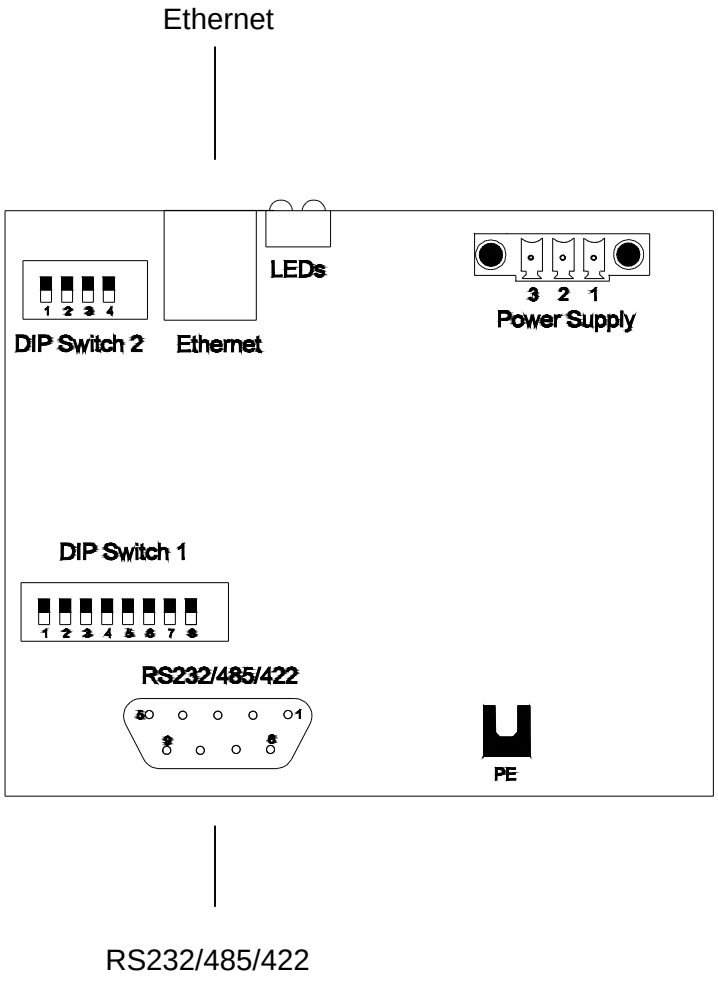
1 General

With the help of the universal interface, Ethernet frames are read out to the serial interface, and frames received by the serial interface are transmitted to the Ethernet.

DIP switches are included at the front panel for easy selection between RS232, RS485 or RS422 interface.

The device's mechanical design is intended for top-hat rail mounting.

2 Overview



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3 Technical Data

General Specifications

Interface 1:	Ethernet TCP, UDP
Baud rate:	10/100 MBaud
Interface 2:	RS232/485/422, selectable with DIP switches
Baud rate:	300 Baud ...115 kBaud
Data format:	7 or 8 bits, 1 or 2 stop bits
Parity:	odd, no, even
Operating voltage:	24 VDC +/-20 %
Power consumption:	ca. 150 mA at 24 VDC
Housing:	top-hat rail housing with metal cover
Housing dimensions:	100 x 87 x 45 mm (3.94'' x 3.43'' x 1.77'')
Mounting:	top-hat rail, 35 mm (1.38'') DIN mounting rail
Protection:	front panel IP00
Operating temperature:	0...+50 °C
Storage temperature:	-25...+60 °C

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3.1 Configuration of the Ethernet Interface

The Ethernet interface must be configured before use (IP address, net mask and port number settings):

- Switch the supply power for the interface on and connect it to the network hub with an RJ45 cable (1:1 cable) or directly to a PC (crosslink cable).
- Start the “MS DOS entry prompt” at your Windows PC.
- If there is a connection to the network:
  - Make sure that at least one entry has been made to the PC’s ARP table:
    ARP -A <CR>
  - If not, make the following entry:
    PING ... <CR> (... = IP address of any desired network user)
- Enter the desired IP address for the interface to the ARP table:
  ARP -S XXX.XXX.XXX.XXX 00-20-4A-xx-xx-xx <CR>

  XXX.XXX.XXX.XXX : desired IP address
  00-20-4A-xx-xx-xx : Ethernet address of the interface
  (see label at the bottom of the housing)
- Make sure that the IP address of the interface is now included in the ARP table:
  ARP -A <CR>
  If not, repeat the last two steps (the pause between entering “PING” and “ARP -S ...” must not be too long).
- Establish a Telnet connection to port 1:
  TELNET XXX.XXX.XXX.XXX 1 <CR>

  This connection will fail (disconnect within 3 seconds). However, the IP address of the interface is temporarily changed.
  Close the Telnet window after acknowledging the error message.

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- Establish a Telnet connection to port 9999:
  TELNET XXX.XXX.XXX.XXX 9999 <CR>

  After the connection has been established, immediately press the enter key (within 5 seconds) in order to enter the setup mode.

- Enter “0” (server configuration).

- Enter the desired IP address and press the enter key.

- Repeatedly press the enter key until
  „Netmask: Number of Bits for Host Part (…)“ appears.
  Enter here the number of free bits for the IP address,
  f.e. „8“ for the netmask 255.255.255.0
  (=11111111.11111111.11111111.00000000) or
  “11“ for the netmask 255.255.248.0
  (=11111111.11111111.11111000.00000000) and press the enter key.

- Repeatedly press the enter key until “Your choice?” appears.

- Enter “1” (channel 1 configuration).

- Repeatedly press the enter key until “Port No (10001)?” appears.

- Enter the desired port number and press the enter key.

- Repeatedly press the enter key until “Your choice?” appears.

- Press “9” to save all settings (-> the Telnet connection is interrupted).

Configuration of the Ethernet interface is now complete.
From now on, the control frame can be transmitted to the interface via the selected IP address and the selected port.

3.2 Configuration of the RS Interface

- Start your web browser (e.g. Netscape Navigator or Internet Explorer)

- Input the recently set IP address (see chapter 3.1) into the address field.

- After ca. 1 minute a HTML page appears, at which the setup for the RS interface can be done.

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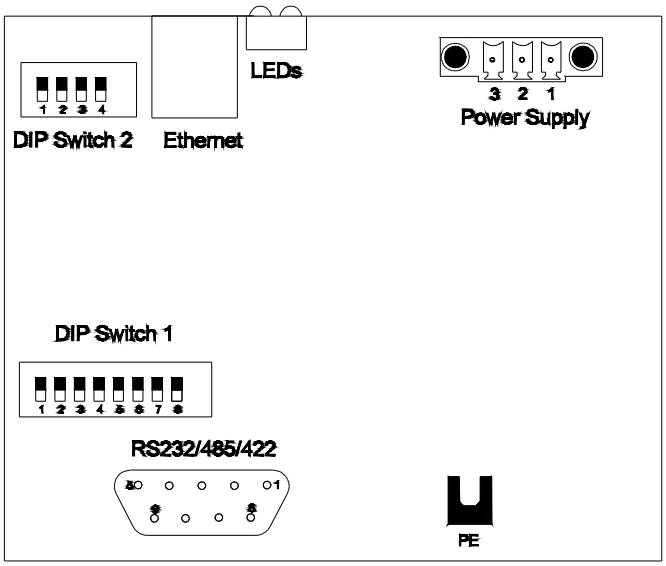
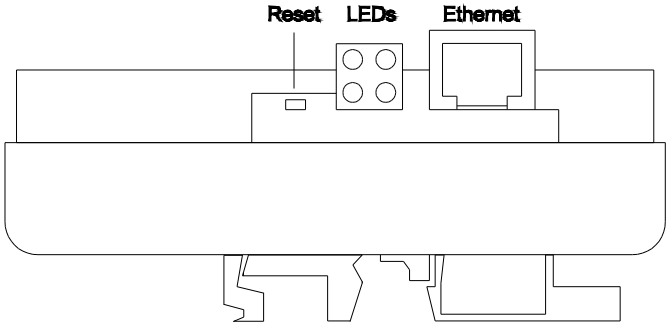
4 Connector Pin Assignments





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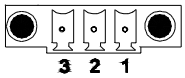
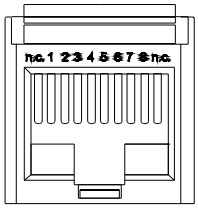
Power Supply



Pin	Assignment
1	+24 VDC
2	GND
3	PE

Ethernet



Pin	Assignment
1	Tx +
2	Tx -
3	Rx +
4	n.c.
5	n.c.
6	Rx -
7	n.c.
8	n.c.

PE
Bend upwards to connect.

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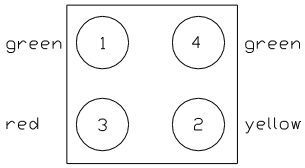
LEDs



LED	Function	Description
1	Serial Port Channel 1 Status	Lights solid green to indicate Channel 1 is idle. Blinks green to indicate Channel 1 is connected to the network and active.
2	Serial Port Channel 2 Status	Not used.
3	Diagnostic	Blinks or lights solid red in combination with LED 1 (green) to indicate diagnostics and error detection. LED 3 (red) = solid, LED 1 (green) = blinking: 1x: EPROM checksum error 2x: RAM error 3x: Network controller error 4x: EEPROM checksum error 5x: Duplicated IP address on the network 6x: Software does not match hardware LED 3 (red) = blinking, LED 1 (green) = blinking: 4x: Faulty network connection 5x: No DHCP response received
4	Network Link Status	Lights solid green to indicate network port is connected to the network.

Normal state connection to channel 1 inactive:
LED 1 lights solid, LED 2 off, LED 3 off, LED 4 lights solid

Normal state connection to channel 1 active:
LED 1 blinking, LED 2 off, LED 3 off, LED 4 lights solid

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DIP Switch 1/2

DIP Switch 1:

DIP Switch 2:

According to the desired RS interface (RS232, RS485 or RS422), the two DIP switches must be set as follows:

RS232:

DIP Switch 1 Pin							
1	2	3	4	5	6	7	8
ON	ON	OFF	OFF	OFF	OFF	OFF	OFF

DIP Switch 2 Pin			
1	2	3	4
ON	OFF	OFF	OFF

RS485:

DIP Switch 1 Pin							
1	2	3	4	5	6	7	8
OFF	OFF	ON	ON	ON	ON	OFF	OFF

DIP Switch 2 Pin			
1	2	3	4
OFF	ON	OFF	OFF

RS422:

DIP Switch 1 Pin							
1	2	3	4	5	6	7	8
OFF	OFF	ON	ON	ON	ON	ON	ON

DIP Switch 2 Pin			
1	2	3	4
OFF	ON	ON	OFF

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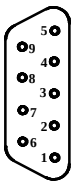
9-Pin Sub-Miniature Socket Connector (RS interface)

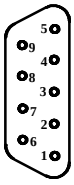
According to the selected RS interface, the following assignment is applicable:

RS232:



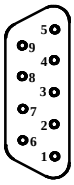
Pin	Assignment
1	n.c.
2	RxD
3	TxD
4	n.c.
5	GND
6	n.c.
7	n.c.
8	n.c.
9	n.c.

RS485:



Pin	Assignment
1	n.c.
2	n.c.
3	Rx+ / Tx+
4	n.c.
5	GND
6	n.c.
7	n.c.
8	Rx- / Tx-
9	n.c.

RS422:



Pin	Assignment
1	n.c.
2	n.c.
3	TxD +
4	RTS
5	GND
6	n.c.
7	RxD -
8	TxD -
9	RxD +

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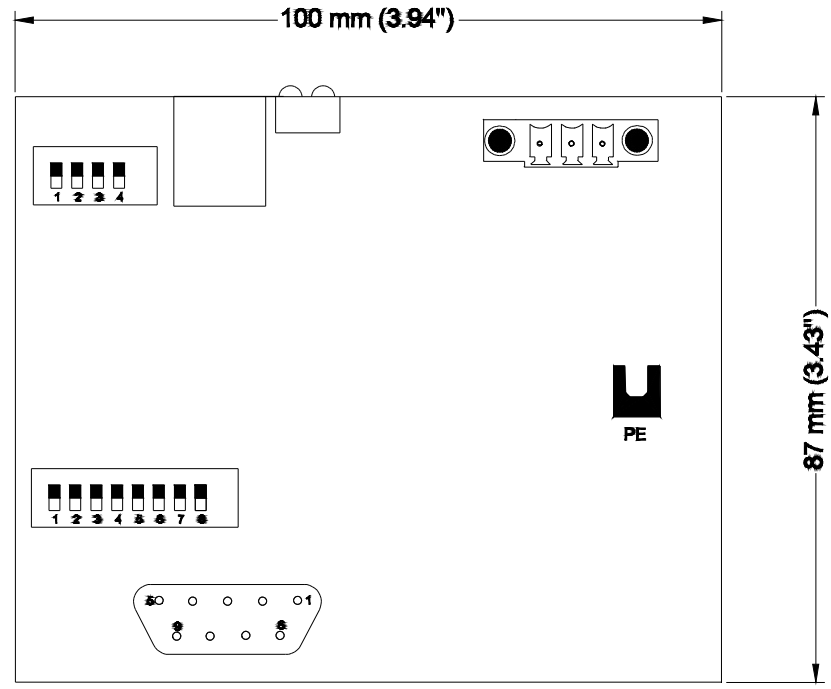
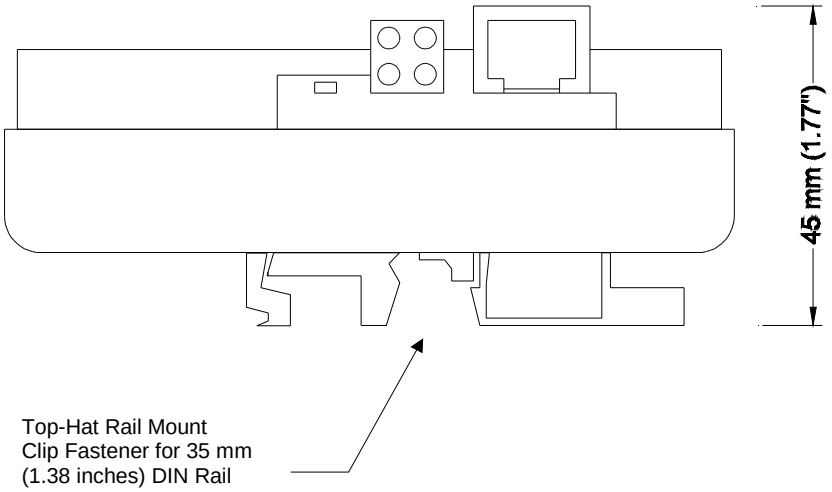
5 Housing Dimensions





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6 Appendix

6.1 Standard Equipment

- Interface with current software and hardware versions
- User's manual
- Mating plug for power supply

6.2 Optional Accessories

- User's manual
- Mating plug for power supply
- Mating plug for 9-Pin Sub-Miniature Socket Connector

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6.3 Declaration of Conformity

Produktbezeichnung: miface FI Ethernet
Product:

Hersteller: microSYST Systemelectronic GmbH
Manufacturer: Zur Centralwerkstätte 10
D-92637 Weiden

Das bezeichnete Produkt stimmt mit der folgenden Europäischen Richtlinie überein: We herewith confirm that the above mentioned product meets the requirements of the following standard:		**Die Übereinstimmung des bezeichneten Produktes mit den Vorschriften der Richtlinie wird nachgewiesen durch die vollständige Einhaltung folgender Normen:** The correspondance of the above mentioned product with these requirements is proved by the fact that these products meet with the following single standards:
Nummer	**Bezeichnung**	**Europäische Norm**
89/336/EWG	**Elektromagnetische Verträglichkeit (EMV)**	EN61000-6-2:2005
		EN61000-6-4:2002

Weiden, den 28.März 2007

Silvan Hartwig

Geschäftsführer
Managing director

microSYST Systemelectronic GmbH, Zur Centralwerkstätte 10, D-92637 Weiden, Germany
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6.4 Guarantee

The interface is guaranteed within the existing period of warranty against defects which existed at the time the device was delivered to the buyer.

The device is subject to technical change without notice. Errors and omissions are excepted. No claims can be honoured for the shipment of a new product. The buyer is required to make notification of defects within 2 weeks after identification of such. Non-observance of notification requirements is equated with acceptance of the defect.

Defects and their symptoms must be described as accurately as possible in order to allow for reproducibility and elimination. The buyer must provide for access to all required and/or useful information regarding defects at no charge, as well as to the affected devices, and must make all of the required data and machine time available free of charge.

The guarantee does not cover defects which result from non-observance of the prescribed conditions of use, or from improper handling.

If the device has been placed at the disposal of the buyer for test purposes and has been purchased subsequent to such testing, both parties agree that the product is to be considered “used” and that it has been purchased “as is”. No guarantee claims may be made in such cases.

The “General Terms and Conditions” regarding manufactured products and services rendered for the electrical industry apply as well.

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6.5 Versions Overview

Ver.	Date	Comments
1.00	1/28/03	Kreuzer
1.10	5/5/03	Kreuzer: Layout
1.20	8/8/03	Kreuzer: Layout
X-M22-5RS2EH-001	2/26/04	Kreuzer: Ethernet Configuration changed
1.40	8/10/09	Kreuzer: Baud rate 10/100 MBaud

Certified per **DIN EN ISO 9001:2008**.

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